Further, the Examiner rejected claims 1 and 2 under 35 U.S.C. 112, second paragraph. Since claims 1 nad 2 were canceled, the rejection is moot.

In addition, the Examiner rejected claims 1-2 under 35 U.S.C. 102(b) as being anticipated by Staver et al. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The present invention is directed to a method and a device for a frequency-converted laser including an optical pumping source and at least one frequency conversion crystal for forming a uni-directional beam path or a resonant uni-directional cavity having at least one frequency conversion crystal. All independent claims claim the aspect of uni-directional beam path or cacity. Staver, in contrast does not disclose uni-directionality. The present invention also includes a pump laser (1), optical pump radiation (2), coupling optics (3). A ring cavity (4) includes a first mirror (16), a Brewster-cut frequency conversion crystal (5), a prism (6) and a second mirror (17). The two mirrors (16, 17) of the ring cavity fulfill the following condition: the first mirror, where the pump beam is entering into the ring cavity, has to be partial reflective for the pump radiation (2) and the second mirror has to be highly reflective for the pump radiation of frequency ω and high transmissive for the inside the Brewster-cut frequency conversion crystal (5) generated frequency 2 ω.

In contrast, Staver discloses a conventional laser resonator (cavity) including a laser medium (col. 2, line 66-67) which includes a bi-directionality of the laser beam. Further, Staver's arrangement is a so-called linear (folded) cavity with two end mirrors M3 and M4 and two folding mirrors M1 and M2 with a laser medium (12) placed in-between. An essential characteristic of such a cavity is that there is a bi-directional laser beam (16) inside the cavity since the laser wave is traveling back and forth via the mirrors M4, M1, M2 and M3. This is seen in Fig. 1 of Staver in which a laser beam (16) is dipicted including arrows of beam 16 at mirror M4 and at mirror M3, indicating the bi-directionality of the laser beam (16).

However, Applicants in the present invention claims a ring cavity which has unidirectional propagation of the laser beam inside the ring cavity (4). Three arrows are

indicating the beam direction inside the cavity (4). Another contrast is the inclusion of the Brewster-cut frequency conversion crystal (5). In contrast to Fig. 1 of Staver, applicants do not disclose a laser medium storing energy to amplify stimulated emission of radiation. The Brewster-cut frequency conversion crystal (5) of Applicants invention is converting radiation of frequency ω into frequency $2\ \omega$.

Thus, the present invention uses a frequency conversion crystal in exactly one direction. This uni-directional use of a frequency conversion crystal is utilized to decrease degradation. Accordingly, it is necessary to determine the beam path direction of a frequency conversion crystal (5, 11, 12) that results in a minimum degradation of the generated converted frequency (preferred beam path direction) in advance of arranging the crystal. Such arrangment is entirely different than Staver, who nowhere disclosed uni-directional beams. Thus, Staver does not anticipate the present invention as claimed in the presently pending claims

For the forgoing reasons applicants submit that independent claims 3 and 4 are patentable over the art of record. Claims 5-11 depend directly or indirectly from independent claim 4 and thus are patentable for the same reasons that claim 4 is patentable. Applicants submit that the application is now in condition for allowance and passage to issuance is.

It is believed that no fees are necessary in connection with this matter. If additional fees are required, authorization is hereby provided to charge our U.S. Patent and Trademark Deposit Account No. 14-1263.

Respectfully submitted,

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